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TWO NEW METHODS OF REDUCTION

IN

DISLOCATIONS OF THE FEMUR.

BY

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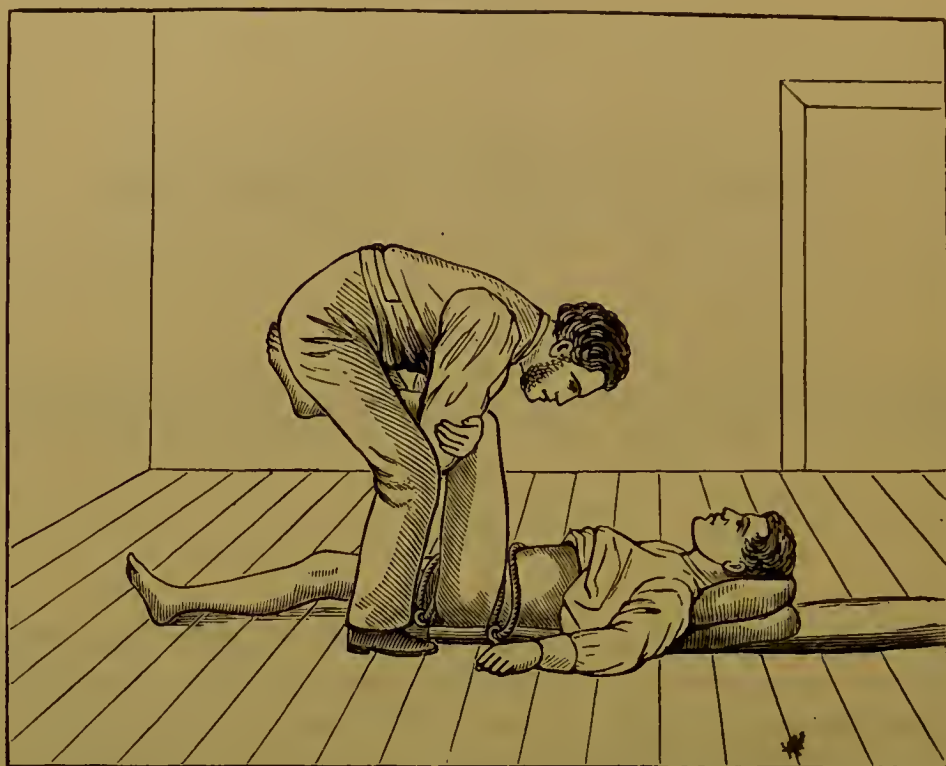
DISLOCATIONS OF THE FEMUR.

IN the preceding number of this Journal I suggested an original method of reducing luxations of the humerus, and I now propose to introduce to the notice of the profession two new methods of dealing with dislocations of the femur, which, for convenience of description, I shall divide into anterior and posterior.

The following were the circumstances under which I had the good fortune to devise my method of treating posterior dislocations:—Several years ago a patient, aged about forty or fifty, suffering from a dislocation on the dorsum ilii, was admitted, during the service of one of my colleagues, into Jervis-street Hospital. He was a remarkable man, having gained by his prowess the title of “King of the Quay Porters,” a body distinguished for their strength and endurance. My colleague, a gentleman of the highest attainments, on three occasions consulted with the staff of the hospital, and with other eminent surgeons, including the late Mr. Adams. Guided by his personal knowledge and the suggestions of his friends, he caused special apparatus to be constructed, from which he expected increased facilities, and ineffectually tried every recognised method of reduction. At the last consultation I obtained permission to test an expedient which had occurred to me. I fixed the patient’s pelvis firmly to the floor, and standing over the limb, I flexed it, and placed his foot between my thighs; then passing my forearms under his knee,

I made vigorous traction upwards, when, to our great relief, I effected the reduction.

Fig. 1.



By this favourable result and a successful experience of more than six other cases, in some of which many methods were tried, I have been enabled to develop the details of the procedure which I shall now describe. Three strong "screw hooks" are inserted into the floor close to the perinæum and each ilium of the patient, and to those hooks he is secured by a strong bandage or rope. The injured thigh is flexed at right angles to the patient's body; the foot and lower extremity of the tibia are placed against the perinæum of the surgeon, who, bending forward with his knees slightly flexed, passes his forearms behind the patient's knee, and grasps his own elbows. He is now in the best position (Fig. 1) to accomplish the reduction. With this object he exerts his strength to draw the femur upwards, which action is generally sufficient to effect it; but, when necessary, circumduction may be combined with extension, as the surgeon, while maintaining traction, sways his body towards the patient's uninjured side, then towards his head, then outwards, and stepping backwards, he lays with a sweep the injured limb by its fellow, and thus the dislocation is reduced. In ischiatic dislocations a bandage, upon which an

assistant may make traction, can be passed round the thigh close to the trochanter, and may be useful for the purpose of liberating the head of the bone from the sacro-sciatic foramen.

While analysing this measure, I shall contrast the facilities afforded by it and by the other methods of reduction for making extension, counter-extension, and coaptation. In femoral dislocations the application of extension is more difficult than in humeral luxations, owing to the dimensions of the limb, which render the grasp of the surgeon almost useless; while the clove hitch and other appliances are notably insecure when placed above the knee, over which they slip with great facility. When the traction is applied to the ankle much of the power is lost, owing to the length of the intervening limb, and the great advantage derivable from the application of the leg as a lever to rotate the femur is forfeited. In my method the extension is applied in the most approved direction, and with the greatest economy of force, as the muscles of prehension are hardly called into play, being only required for the slight effort necessary to fix the hands on the elbows, while the forearms are flexed by their numerous and powerful muscles, and the patient's leg is kept in position by being a lever of the third order, and its displacement, owing to the unfavourable point to which the power is applied, would require a force of over a thousand pounds. Extension, when derived from many assistants, as I observed in my paper on Dislocations of the Humerus, is awkward and obstructive; and when it has a mechanical source it is still less desirable, being rigid, unmanageable, and dangerous; it can only be applied slowly, and in a fixed direction; when in action its effects cannot be estimated until, perhaps, much mischief is done; and when the surgeon wishes to know if his effort be successful he can only ascertain this by relaxing the tension, which can but be effected, slowly, by reversing the pulley, or, in a violent and tumultuous manner, by the interposition of some of the ingenious and well-intended instruments constructed for the purpose. The agency which I would substitute is ample, under perfect control, and sustainable, if necessary, for a considerable time, being derived from the most powerful muscles of the body—namely, those of the back, the shoulders, and the lower extremities. It is an adaptation of the feat termed by athletes “raising” or “lifting a weight,” which affords the most powerful example of human dynamics—reaching, in some instances.

to 800 or 1,000 lbs., the average being from 300 to 500 lbs.—a force which, if mechanical, the careful surgeon would rarely exceed. Again, as the grasp of the gymnast is one of the limitations of the exploit, my method, which minimises this function, economises a certain amount of muscular energy, which possibly may be utilised in increasing the lifting power of the operator. The counter-extension is simply only limited by the strength of the floor, the hooks, and the bandages or rope. The boards are secured from being displaced by the fact that in addition to his own weight the operator transmits to them a resistance equal to the power he exerts. The thread upon the screws should be deep, that they may not be easily torn through the boards, and they should be inserted at an angle obtuse to the body of the patient, as thus they afford the greatest resistance. The coaptation which I propose is a combination of the principle of vertical traction, accidentally discovered by Dr. Allen, of Vermont, while lifting a patient into bed, and termed “automatic reduction,” and of the “manual method” of Hippocrates and Paulus Ægineta, which has been formulated in Europe by Desprès and Pouteau in the words “flex, abduct, and rotate”—the greatest prominence being given by them to “abduction,” while Reid and Bigelow in America use the terms “flex, abduct, and evert”—Bigelow regarding “flexion” as the most important motion. “Reduction by manipulation,” which includes all those refinements, must be adapted to the multiformity of dislocations, and due prominence given to that element or constituent of the manœuvre which is best adapted to the characteristics of the case. Another factor in coaptation is the rotatory force exerted on the femur by the lateral motions of the leg, acting as a lever, commanded at its upper extremity by the arms and at the lower by the thighs of the surgeon. This is a power capable of great utilisation.

For anterior luxations I propose the following method, which is a modification of that suggested for humeral luxations:—The patient is placed on his back on a bed or table of such an elevation that his pelvis is nearly as high as the trochanter of the surgeon. A bandage passed round the pelvis, and secured on the side of table or bed furthest from the dislocation, affords efficient counter-extension. The surgeon, with his face directed towards the dislocated joint, stands on the inner side of the injured limb, with his trochanter pressed firmly against the femur; bending the leg

behind his back he grasps the ankle with the corresponding hand, and is in the position (Fig. 2) to effect the reduction. He now rotates or turns his body away from the patient, thus making traction on the femur in the most favourable direction, and, at the same time, pressing its head towards the acetabulum. I have already considered the mechanism of this expedient in my former paper. The operator has one hand disengaged for the application of minor manipulation if it should be necessary.

Fig. 2.



Before concluding this article I wish most distinctly to disclaim any intention of proposing a substitute for that great triumph of modern surgery, the treatment of femoral dislocation by simple manipulation during anæsthesia; but most surgeons of experience have encountered instances of its failure, even in the most skilful hands. In such cases I claim many advantages for my methods, which afford other avenues of escape from that true opprobrium of surgery, an unreduced dislocation. They also promise to render the surgeon independent of anæsthesia, assistants, and mechanical power, as in several of my cases I have reduced the dislocations without aid from any source.

